

Quarterly Report
October 1, 2004 to December 31, 2004

Project Title

Fish Passage in Montana Culverts Phase II – Passage Goals

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Introduction

This progress report covers work completed between October 1, 2004 and December 31, 2004. Work on the project during this period has been primarily devoted to equipment development and site selection.

Project Objective

Culverts are a common and often cost effective means of providing transportation intersections with naturally occurring streams or rivers. Fish passage and fish habitat considerations are now typical components of the planning and design of waterway crossings. Many culverts in Montana span streams that support diverse fisheries. The health of these fisheries is an essential element of a recreational industry that draws hundreds of thousands of visitors to Montana annually. Transportation system planners, designers and managers recognize that fish passage through Montana's culverts is a concern. However, there is much contention concerning the impact that a culvert can have on a fishery. Recent basin-wide studies in Montana (Phase I of this project - final report in November 2004) indicate that the tools that some planners and designers promote for forecasting fish passage concerns may be overly conservative. This is reflected in the diversity of fish passage goals that are being considered by state agencies in the Northwest. Some managers contend that all culverts should pass all fish at all times, whereas others suggest that this is an unrealistic criterion, particularly during high flow events. Which species, life stages, and how many individuals must have fish passage access for how long, are questions that are often brought forward during discussions on the design and retrofitting of culverts to accommodate fish passage concerns. *The problem is that for fish species and settings in Montana, the timing and number of fish that must pass a culvert to maintain viable species diversity in the watershed is unknown.*

Progress

Personnel We have recruited the second research assistant for the project - Andy Solcz. Andy has 6 years of experience in public and private fisheries industries after his B.S. degree in Biological Sciences from the University of Alaska, Fairbanks. Andy will begin work on the project on January 1, 2005, joining Jesse Patton who has been working on the project since August, 2004.

Equipment We have decided to pursue the use of Texas Instruments half-duplex PIT tags in combination with antennas built in-house. We will begin by building a prototype antenna for testing in the MSU Civil Engineering hydraulics lab.

Site Selection We have decided to continue work on the Mulherin Creek sites near the north entrance to Yellowstone Park. The creek provides important and productive spawning habitat for Yellowstone cutthroat trout, has ample background data from Matt Blank's MDT funded work and from various FW&P studies, and has several culverts with a variety of configurations.

Future

In the next few months we will build and test prototype PIT equipment and begin to instrument the field sites. The cutthroat trout tend to migrate upstream during the falling limb of the spring runoff hydrograph, but we would like to have the sites outfitted by mid March.

Budget

Actual expenditures to date are in line with planned expenditures, as shown below.

